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内蒙古中渐新世仓鼠化石的发现

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关键词　内蒙古　中渐新世　仓鼠科

内 容 提 要

本文记述了在内蒙古中渐新统中发现的仓鼠化石三属四种 *Cricetops minor* 新种，*Cricetops dormitor*, *Eucricetodon caducus* 和 *Selenomys mimicus*。这是中渐新世仓鼠化石在我国的首次发现。它肯定了三盛公地区产该化石的地层时代为中渐新世；进一步证明了 *Selenomys* 不是 aplodontid，而是 cricetid，应归入 Cricetidae 科。

仓鼠是现生啮齿类中种类繁多的一类小型啮齿动物。它在渐新世时已分布很广。在北美和欧洲渐新统中都发现了较丰富的仓鼠化石。在亚洲渐新统中也发现过仓鼠化石，但已知数量和种类都很少，而且主要产于蒙古人民共和国中渐新统 Hsanda Gol 组。我国渐新世仓鼠发现得更少，中渐新统中还从未发现过仓鼠化石。

三盛公地区[1]是有名的产渐新世哺乳动物化石地区。德日进和桑志华（Teilhard de Chardin et Licent, 1924）在该地区发现过大小哺乳动物化石二十余种，但并未发现过仓鼠化石。笔者等于1977年和1978年曾两次前往该地区进行野外考察，采集到一些小哺乳动物化石，其中包括一些仓鼠化石。材料虽少，但这是仓鼠化石在我国中渐新统的第一次发现，对了解我国中渐新世仓鼠的种类、特点和与其他地区的关系都很有意义。

本文插图是胡惠清同志和沈文龙同志绘制的，在此表示感谢！

一、系 统 描 述

Cricetidae Rochebrune, 1883

***Cricetops* Matthew et Granger, 1923**

***Cricetops minor* sp. nov.**

（图 1）

正型标本　右 M^1（V8418）。

1）三盛公是内蒙古巴彦淖尔盟磴口县城以南的一个小镇，位于黄河西岸。Teilhard de Chardin 和 Licent (1924) 所指的产渐新世哺乳动物化石的三盛公地区，实际上是三盛公对岸，即黄河东岸、三盛公大桥以东地区。在行政区划上属于内蒙古伊克昭盟杭锦旗。为了避免混乱，我们仍称该地区为三盛公地区。

地点和层位　内蒙古伊克昭盟杭锦旗罗布召西北、三盛公大桥东 77046 地点；中渐新统乌兰布拉格组。

特点　牙齿小，仅为 *Cricetops dormitor* 的 3/5 左右；齿冠低；两个前边尖大小彼此相等，均呈圆锥形；前凹狭窄，后端开口。

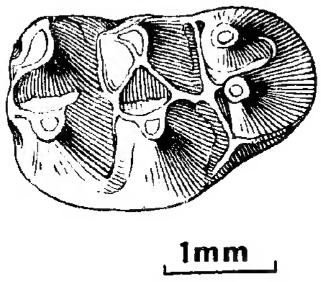

图 1　*Cricetops minor* 新种 正型标本。 M^1 (V8418) 嚼面

描述　M^1 齿冠低。前叶明显变窄，上有一对发达的前边尖。两前边尖大小彼此相等，均约呈圆锥形。两前边尖之间有一很狭窄的凹，其前端基部封闭，后端向后开口，无横脊相连。前纵脊完全，但很低，连接原脊 I 和舌侧前边尖。前纵脊内距和前纵脊外距都发达，一直伸达牙齿边缘，但很低。前尖和原尖均约呈四角锥状，组成第二对尖。原脊 I 和原脊 II 低，封闭原坑。前尖后外侧的外脊伸达中脊。后尖和次尖组成最后一对尖，也均呈四角锥形。后脊很短，斜伸达后齿缘。次尖前臂较明显，与后尖前内基部相连，次尖后臂也伸达后齿带。后凹封闭。内脊短而低，与齿纵轴斜交。中脊发育，伸达牙齿外缘。内中脊短。后齿带发育。内齿带在原凹和内凹入口处发育。外齿带也只在中凹和前凹入口处有。 M^1 长 2.6 毫米，宽 1.68 毫米。

比较　M^1(V8418) 齿冠低，具六个尖，每两个尖形成一对，前叶窄，上具一对很发达的前边尖，以及 M^1 的脊的形态结构特征都与 *Cricetops* 的一致。*Cricetops* 现仅知两种：*C. dormitor* 和 *C. aeneus*。 V 8418 M^1 显然比这两个种的都小得多，而且它的两前边尖均呈圆锥形，两前边尖间的凹很狭窄，其后端向后开口，不被封闭。 而 *C. dormitor* 和 *C. aeneus* 的舌侧前边尖均为新月形，前边尖间凹较开阔，形成封闭的盆。

Cricetops dormitor Matthew et Granger, 1923

(图 2)

标本　四枚 M^1(V8419.1, V8420, V8421.1 和 V8421.2)， 左 M^2(V8419.2)， 右 M^3(V8419.3)， 右 M_1(V8422.1)， 右 M_2(V8422.2) 和右 M_3(V8422.3) 各一枚， 和右 M_2 前部 (V7960)。

地点和层位　内蒙古伊克昭盟杭锦旗罗布召西北、三盛公大桥东 77046 (V8422)、

表 1　*Cricetops dormitor* 颊齿测量(单位：毫米)

	左 M^1 V8421.1	左 M^1 V8420	右 M^1 V8419.1	左 M^2 V8419.2	右 M^3 V8419.3
长 (L.)	4.10	4.10	4.02	2.95	2.71
宽 (W.)	2.71	2.87	2.79	2.54	2.71
	右 M_1 V8422.1	右 M_2 V8422.2	右 M_3 V8422.3		
长 (L.)	3.44	3.03	2.87		
宽 (W.)	2.30	2.42	2.38		

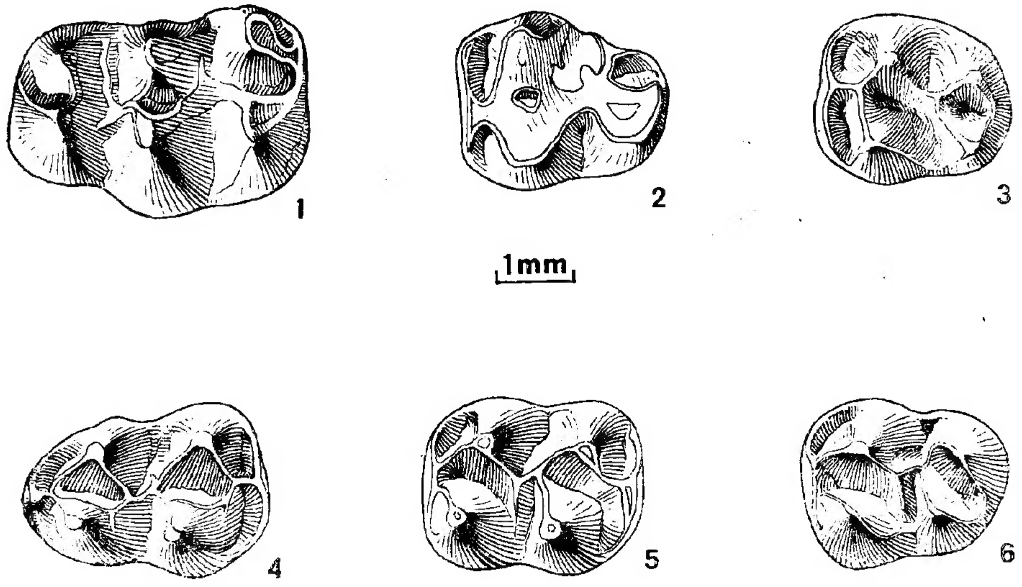

图 2　*Cricetops dormitor* M. & G., 1923，颊齿嚼面

1.左 M^1(V8421.1)；2.左 M^2(V8419.2)；3.右 M^3(V8419.3)；
4.右 M_1(V8422.1)；5.右 M_2(V8422.2)；6.右 M_3(V8422.3)

77046.5 (V8421)、77049.2 (V8419)、77049.4 (V8420) 和 770506 (V7960) 等地点；中渐新统乌兰布拉格组。

鉴定　内蒙古的标本在颊齿齿冠低，以及齿尖和脊的形态和结构上都与 *Cricetops dormitor* 的正型标本以及 Schaub (1925) 描述的标本的特点是一致的，大小也在已知的 *Cricetops dormitor* 的变异范围内，特别与 Kowalski (1974) 的小个体的居群的一致。

Eucricetodon **Thaler, 1966**
Eucricetodon caducus **(Shevyreva, 1967)**

(图 3)

Cricetodon caducus Shevyreva, 1967, p. 92, fig. 2;
Eucricetodon caducus, Vianey-Liaud, 1972, p. 39;
Eucricetodon caducus, Lindsay, 1977, p. 603。

标本　右 M^1(V8423.1)、左 M^2(V8423.2)、右 M_1(V8424)、右 M_2(V8423.3) 和左 M_2(V8423.5) 各一枚、右下颌具 M_2 和 I (V8423.4)。

地点和层位　内蒙古伊克昭盟杭锦旗罗布召西北、三盛公大桥东 77049.2(V8423) 和

77046(V8424) 地点;中渐新统乌兰布拉格组。

修正特点 个体较 *Eucricetodon asiaticus* 小; M^1 前叶较细长,原脊 I 和原脊 II 低而短,封闭原坑; M^2 方形,只有原脊 I ,无原脊 II; M^{1-2} 中脊短,后脊与次尖前臂相连; M_1 前边尖低小,具下后脊 II, 有游离的下次尖后臂;下臼齿下中脊短。

鉴定 内蒙古的标本在大小、M^1 具原坑、M^{1-2} 中脊短、后脊与次尖前臂相连, M^2 方形、只有原脊 I 存在, M_1下前边尖低小,下臼齿下中脊短等特点上都与 *Eucricetodon caducus* 的一致。 Shevyreva (1967) 描述的材料中无 M_2 和门齿。我们的材料中有 I 和三枚 M_2。 M_2 的特点是齿冠低,横脊基本上横向,分别与下原尖前臂和下次尖前臂相连, 游离的下原尖后臂较短,其长等于或稍长于短的下中脊,下外凹横向等。它的下门齿横切面呈三角形,前面珐琅质外侧有三条平行的纵棱。

Lindsay (1977,594页,表 2) 和 Comte (1985, 15 页、16 页、25 页和 34 页图 11) 研究了 *Eucricetodon* 的几个种 (*E. asiaticus*, *E. atavus*, *E. huerzeleri* 和 *E. dubius*) 的下门齿,指出了这几个种的下门齿珐琅质表面纹饰的区别特征。 *E. caducus* 的门齿的纹饰与 *E. asiaticus* 的一致。单纯从门齿的特点看 *E. caducus* 与亚洲的 *E. asiaticus* 的关系较与上述的欧洲的种近。 但臼齿的特点(如 M^1 后脊与次尖前臂相连, M^2 只有原脊 I 存在, M_1 下前边尖低小, M_2 的下原尖后臂较短等)表明 *E. caducus* 与 *E. asiaticus* 的区别较明显, 而与云南早渐新世的 *Eucricetodon meridionalis* 较相似。 *E. caducus* 与 *E. me-*

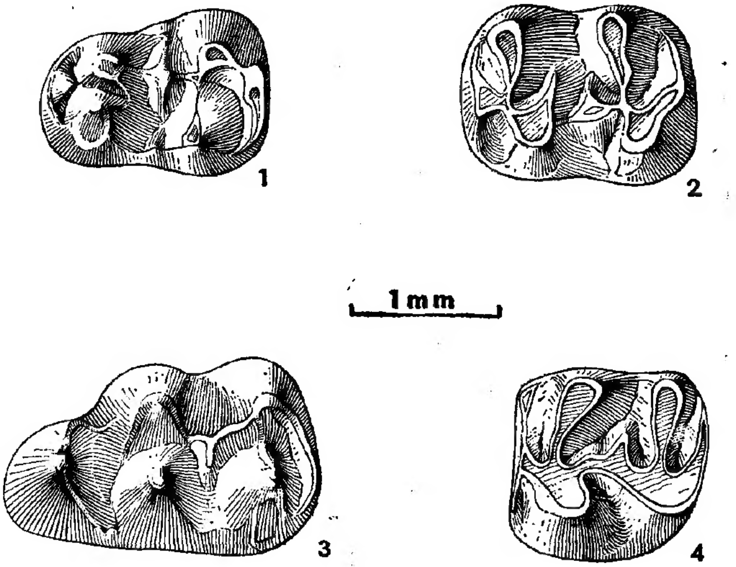

图 3 *Eucricetodon caducus* (Shevyreva, 1967) 颊齿嚼面

1.右 M_1(V8424); 2.左M_2(V8423.5); 3.右 M^1(V8423.1); 4.左 M^2(V8423.2)

表 2 *Eucricetodon caducus* 颊齿测量(单位：毫米)

	右 M^1 V8423.1	左 M^2 V8423.2	右 M_1 V8424	右 M_2 V8423.3	右 M_2 V8423.4	左 M_2 V8423.5
长 (L.)	2.17	1.32	1.58	1.34	1.49	1.57
宽 (W.)	1.48	1.32	1.20	1.10	1.29	1.29

ridionalis 区别只在于个体较大，M^1 无前纵脊，上臼齿中脊短等。 *E. caducus* 与 *E. meridionalis* 的关系可能较与 *E. asiaticus* 的关系更近些。 前者可能由类似 *E. meridionalis* 的祖先类型进化来的。可惜现在还不知道 *E. meridionalis* 的门齿特征。

E. caducus 过去仅在苏联哈萨克斯坦中渐新统发现过。 在内蒙古发现 *E. caducus*，证明该种的分布范围可以一直延伸到我国内蒙古鄂尔多斯地区。

Selenomys mimicus Matthew et Granger, 1923

(图 4)

标本 右上颌骨具 M^{1-2}(V8425.1)，右下颌具 M_{2-3}(V8425.2)，左下颌骨具 M_{1-3}(V8426.1)，左 M_1(V8426.2)，右下颌具 I 和 M_1(V8427.1)，右 M_{1-2}(V8427.2)，右 M_1(V8428) 和左下颌具 M_{2-3}(V8429)。

地点和层位 内蒙古伊克昭盟罗布召西北、三盛公大桥以东 77046(V8426)，77047(V8427)，77049.2(V8428)，77049.7(V8429) 和 78020(V8425)；中渐新统乌兰布拉格组。

鉴定 上、下牙齿列均只有三个臼齿，无前臼齿，齿式为 $\frac{1003}{1003}$。颊齿中等高冠；四个主尖均呈新月形，组成前、后两对；M^1_1 的前边尖发育。下门齿窄，其前面的珐琅质具羽状细棱。上颌骨具大眶下孔。下颌骨厚，颏孔位于齿间隙后段稍下方。咬肌脊前端结节达 M_2 下方。

Matthew 和 Granger (1924) 在确立 *Selenomys mimicus* 时，不知道 *Selenomys* 是否

表 3 *Selenomys mimicus* 颊齿测量(单位：毫米)

		N	min	mean	max	V8425.1		
M_{1-3} 长 (L)		1		7.13				
M_1	长 (L)	4	2.30	2.32	2.38	M^1	长 (L)	3.28
	宽 (W)	5	1.56	1.66	1.72		宽 (W)	2.30
M_2	长 (L)	4	2.38	2.56	2.79	M^2	长 (L)	2.30
	宽 (W)	4	1.48	1.62	1.80		宽 (W)	1.89
M_3	长 (L)	3	2.54	2.70	2.95			
	宽 (W)	3	1.31	1.45	1.64			

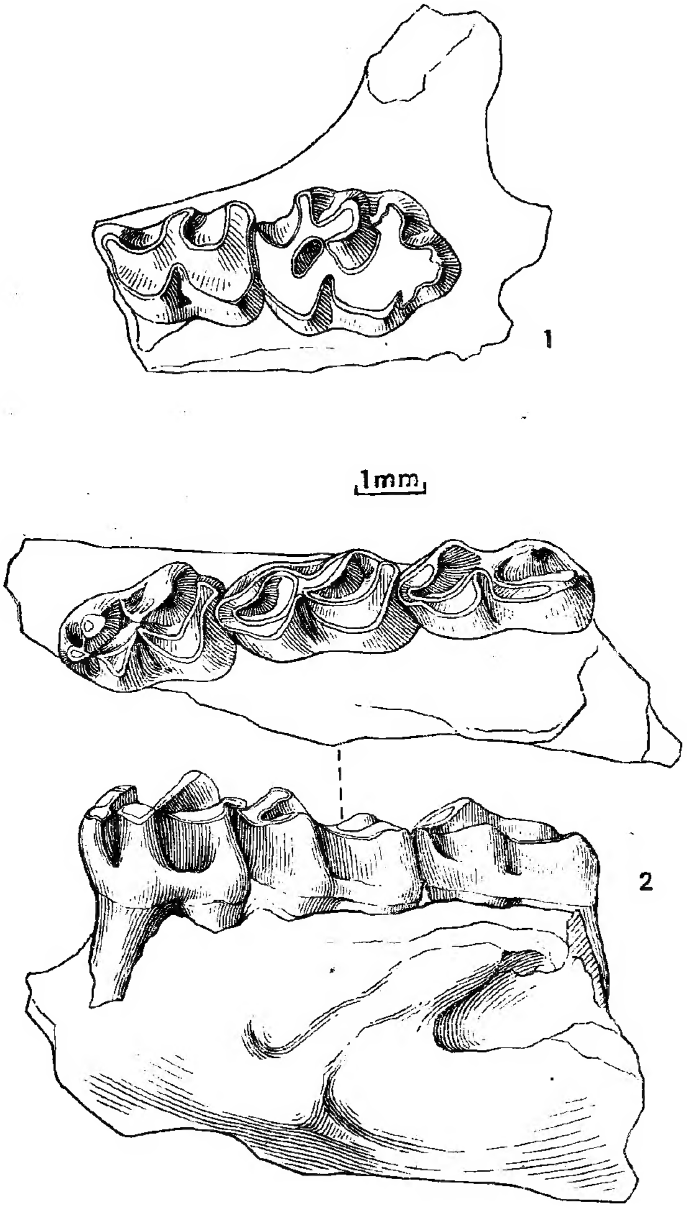

图 4 *Selenomys mimicus* M. & G., 1923

1.右上颌骨具 M^{1-2}(V8425.1) 嚼面; 2.左下颌骨具 M_{1-3}(V8426.1) 上、嚼面, 下侧面

具 P^4。 但 Kowalski (1974) 的标本证明 *S. m micus* 无 P^4,也就是说 *Selenomys* 的上颊齿齿式为 1003。所以,根据齿式,颊齿的大小和结构,我们的标本均可归入 *S. mimicus*。

关于 *Selenomys* 的分类位置,过去存在一些不同的看法。Matthew 和 Granger(1923) 在建立 *Selenomys* 属时,认为它的颧弓的特点与 *Cricetops* 的一致,将它归入 Cricetopidae 科。 Simpson (1945) 将 Cricetopinae 作为 Cricetidae 的亚科。 而 Stehlin 和 Schaub

(1951) 强调了 *Selenomys* 的牙齿形态的特殊性，将它放在 Cricetidae 科中，但位置不定：Cricetidae incertae sedis。总之，*Selenomys* 一直被认为是一种仓鼠。然而，Mellett (1966, 1968) 在重新研究了 *Selenomys* 后，认为它的下颌角和颊齿的结构更像 Aplodontidae，将 *Selenomys* 归入 Aplodontidae 科。Kowalski (1974, 152 页)也赞成 Mellett 的意见。笔者 (1987) 在研究内蒙的 aplodontids 时曾指出，*Selenomys* 在头骨类型、齿式以及颊齿的结构特点上更像 Cricetidae，而不像 Aplodontidae，主张仍将 *Selenomys* 归入 Cricetidae 科。

笔者这一次又重新将 *Selenomys* 与 Cricetidae 和 Aplodontidae 进行了比较，进一步证明：不但 *Selenomys* 的齿式是 $\frac{1003}{1003}$，与 Cricetidae 的一致，而 Aplodontidae 的齿式为 $\frac{1023}{1013}$；*Selenomys* 的豪猪型的头骨与某些 cricetids (如 *Cricetops*, *Eucricetodon atavus*, *Pseudocricetodon montalbanensis*) 的相似，与具始啮型头骨的 Aplodontidae 相区别；而且它的颊齿结构，如无论是 M^1 还是 M_1 都具有发达的前边尖，上臼齿没有小尖的任何痕迹等也与 Cricetidae 的相同，而与 Aplodontidae 的不同。尽管 *Selenomys* 的颊齿的主尖也呈新月形，看上去似乎有些像某些 aplodontids，但它的次尖很发达，与后尖组成一对尖。这样，*Selenomys* 的上、下臼齿均由两对新月形齿尖组成，这也与 Aplodontidae 的不同，而与某些仓鼠，如 *Scottimus*，特别是 *Pliotomodon* 的很相似。的确，*Selenomys* 的下颌角明显地向内弯的特点与一些 aplodontids 的相似。但是，并不是所有的 aplodontids 都具有这一特点。最近在山东山旺发现的一类 aplodontid，新属 *Ansomys* 的下颌角就根本不向内弯，而是向后伸出，与下颌骨体在同一垂直面上。另一方面，除 aplodontids外，也还有一些啮齿动物，如一些松鼠和跳鼠的下颌角也强烈地向内弯。在不同的亚目中都有种类具有向内弯的下颌角的特点的现象表明这一特点的出现只是一种趋同现象，并不能作为啮齿类中划分较高级(如科级)分类阶元的重要特征，也不能作为将 *Selenomys* 归入 Aplodontidae 的依据。因此，将 *Selenomys* 由 Aplodontidae 中排除而仍归入 Cricetidae 是比较合适的。至于 *Selenomys* 与 Cricetidae 中其他各类的关系，还有待发现更多的材料。

二、小　结

1. 内蒙古三盛公地区发现的仓鼠化石共三属四种。除了 *Cricetops minor* 新种外，其余的三个种 (*Cricetops dormitor*, *Eucricetodon caducus* 和 *Selenomys mimicus* 过去都只在蒙古人民共和国或苏联哈萨克斯坦境内发现过。这些化石在我国内蒙古的发现，说明这些种类分布范围比原来已知的广，向东南可以一直分布到内蒙古鄂尔多斯地区。这是亚洲目前发现这些化石最东最南的地区。

内蒙古三盛公地区的渐新世哺乳动物化石最早是 Teilhard de Chardin 和 Licent (1924) 发现的。对该地区含哺乳动物化石的地层时代的看法随着认识的加深也在不断地改变和完善。Teilhard de Chardin 和 Licent 最初 (1924a) 认为其时代为上新世。但在仔细考虑了所收集的化石后，他们 (Teilhard de Chardin 和 Licent 1924c, 463 页) 认为该地区的地层实际上与蒙古三达河组 (Hsanda Gol Formation) 的层位相当，时代为

渐新世。 Teilhard de Chardin (1926) 在专题研究该地区哺乳动物化石后证实了上述想法。但认为两者的时代可能较晚，有可能介于渐新世和中新世之间。 Mellett (1968) 根据三达河组所含动物群和所夹火山岩的同位素年龄(距今 31—32 百万年)，证明三达河动物群的时代为中渐新世。 笔者 (1987) 论证了三盛公地区的地层应属中渐新统乌兰布拉格组。从仓鼠化石组成上看，三盛公地区动物群的时代的确与三达河组的时代相当，为中渐新世。

2. 亚洲目前已知中渐新世仓鼠化石共三属六种。只有 *Eucricetodon* 为与欧洲共同的属。其余二属 *Cricetops* 和 *Selenomys* 则为亚洲特有类型，而且 *Cricetops* 的个体数量在整个三达河动物群中占绝对优势。三盛公地区的中渐新世仓鼠也具有同样的面貌。至少说明在中渐新世亚洲的仓鼠只有 *Eucricetodon* 迁往欧洲，其余的两属 *Cricetops* 和 *Selenomys*，虽然在亚洲较繁盛，分布较广，但未能迁往其他大陆，而是留在亚洲成为土著类型。

3. *Eucricetodon* 中，*E. caducus* 与 *E. meridionalis* 有较近的关系，前者有可能由类似后者的类型起源的。

4. *Selenomys* 无论在头骨类型、齿式还是在牙齿结构上都像 Cricetidae，而不同于 Aplodontidae。因此，*Selenomys* 仍应归入 Cricetidae 科。

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DISCOVERY OF CRICETIDS (RODENTIA, MAMMALIA) FROM MIDDLE OLIGOCENE OF NEI MONGOL, CHINA

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Key words Nei Mongol; Middle Oligocene; Cricetidae

Summary

The Cricetidae, a group of small rodents presently extremely flourishing all over the world, were already widely distributed in Holarctic in Oligocene. Although abundant Oligocene cricetids have been found in North America and Europe, their occurrence in Asia has been restricted so far mainly to the Hsanda Gol Formation. In China no middle Oligocene cricetids had been encountered until 1977 and 1978, when the author succeeded in finding some cricetids from Saint Jacques,[1)] Nei Mongol, China. Those cricetid are described in this paper.

Systematics

Cricetidae Rochebrunne, 1883

1) Saint Jacques is a small town to the east of Denkou County, Bayannur League, Nei Mongol and is located on the western bank of the Yellow River. The Oligocene fossil-bearing beds are, in fact, distributed on the eastern bank of the Yellow River, in the area to the east of Saint Jacques Bridge. Teilhard de Chardin and Licent (1924) called this fossil-bearing area the Sains Jacques area because it is just opposite to Saint Jacques. Nowadays the fossil-bearing area belongs to another administrative area: Hangging Banner, Ih Ju League, Nei Mongol. In order to avoid confusion I still call this locality Saint-Jacques following the designation of Teilhard de Chardin and Licent.

Cricetops Matthew et Granger, 1923

Cricetops minor sp. nov.

Holotype Right M^1 (V 8418).

Locality and horizon Loc. 77046 of IVPP; Middle Oligocene, Wulanbulage Formation.

Diagnosis About 3/5 of *Cricetops dormitor* in size; brachydont; double anterocone developed; conical-shaped and equal in size; anterofossette very narrow and opened posteriorly.

Description and comparison The crown of the tooth is low. The anterior lobe is narrow and composed of a pair of developed anterocones which both are conical-shaped and equal in size. The fossette between the two anterocone is very narrow and opened posteriorly. The anteroloph, connecting entoanterocone with protoloph I, is complete but very low. The lingual and labial spurs extend to the margin of the tooth. The second pair of cones consists of quadrangle shaped protocone and paracone. The protofossette is closed by the protoloph I and protoloph II. The ectoloph joins the paracone with the mesoloph. The third pair of cones, the metacone and hypocone, are also quadrangle and are connected by their anterior arms. The short metaloph and posterior arm of the hypocone join the posterior cingulum, respectively, so that the posterior fossette is closed. The short and low entoloph is oblique to the longitudinal axis of the tooth. The long mesoloph extends to the external border of M1/. The entomesoloph is short. The posterior cingulum is developed. The external and internal cingula are partly developed.

Cricetops minor is similar to *Cricetops* in the basic shape and structure of the cusps and lophs. It differs from known *Cricetops* (*C. dormitor* and *C. aereus*) in smaller size, having a double conical anterocone with a narrow fossette opened posteriorly.

Cricetops dormitor Matthew et Granger, 1923

Materials 4 M1/(V 8419.1, V 8420, V 8421.1 and V 8421.2), LM2/(V 8419.2), RM3/(V 8419.3), RM/1 (V 8422.1), RM/2 (V 8422.2), RM/3 (V 8422.3) and the anterior part of M_2 (V 7960).

Locality and horizon Loc. 77046 (V 8422), Loc. 77046.5 (V 8421), Loc. 77049.2 (V 8419), Loc. 77049.4 (V 8420) and Loc. 77050b (V 7960); Middle Oligocene, Wulanbulage Formation.

Remark The tooth morphology and size show that the material from Nei Mongol are of *Cricetops dormitor*.

Eucricetodon caducus (Shevyreva, 1967)

Cricetodon caducus Shevyreva, 1967, p. 92, fig. 2;
Eucricetodon caducus, Vianey-Liaud, 1972, p. 39;
Eucricetodon caducus, Lindsay, 1977, p. 603.

Material RM1/ (V 8423.1), LM2/ (V 8423.2), RM/1 (V 8424), RM/2 (V 8423.3), LM/2 (V 8423.5) and right lower jaw with I and M/2 (V 8423.4).

Locality and horizon Loc. 77049.2 (V 8423) and Loc. 77046 (V 8424); Middle Oligocene, Wulanbulage Formation.

Revised diagnosis Smaller in size than *Eucricetodon asiaticus*; M1/ anterior lobenarrow and long, protoloph I and protoloph II present, low, and closing the protofossette; M2/ quadran-

gular-shaped, only protoloph I present; M1-2/ mesoloph short, with metaloph joining anterior arm of hypocone; M/1 anteroconid low and with posterior arm of hypoconid free; mesolophid of lower molars short.

Remark M1/, M2/ and M/1 agree with material of *Eucricetodon caducus* described by Shevyreva (1967). In addition, specimens in our material include the M/2 and lower incisor which were absent in Shevyreva's material.

On M/2 the metalophid and hypolophid are transverse and join the anterior arm of the protoconid and hypoconid, respectively. The posterior arm of the protoconid is free and equal to or longer than the short mesolophid. The ectofossettid is transverse. The incisor has three parallel, longitudinal, thin raised lines on the lateral side of the anterior surface.

Lindsay (1978, p. 594, tab. 2) and Comte (1985, p. 15, p. 16, p. 23, p. 25 and p. 34, fig. 11) described the ornamentation of incisor enamel of some species of *Eucricetodon* (*E. asiaticus, E. atavus, E. huerzeleri* and *E. dubius*). It is clear that the ornamentation of incisor enamel of *E. caducus* is similar to that of *E. asiaticus*.

Among Asian Oligocene cricetids, however, *E. caducus* is more similar to *E. meridionalis* than to *E. asiaticus* in molar morphology such as metaloph joining anterior arm of hypocone on M1/, having only protoloph I on M2/, low and small anteroconid on M/1 and shorter posterior arm of protoconid on M_{2-3}. *E. caducus* differs from *E. meridionalis* only in larger size, lack of the anteroloph on M1/ and having shorter mesoloph. It is possible that *E. caducus* has closer phyletic relations with *E. meridionalis* and may be derived from *E. meridionalis*-like. It is a pity that no incisor of *E. meridionalis* has been known yet.

Selenomys mimicus Matthew et Granger, 1923

Materials Right maxilla with M1/-2/ (V 8425.1), right lower jaw with M/2-/3 (V 8425.2), left lower jaw with M/1-/3 (V 8426.1), left M/1 (V 8426.2), right lower jaw with I and M/1 (V 8427.1), right M/1-2 (V 8427.2), right M/1 (V 8428) and left lower jaw with M/2-3 (V 8429).

Locality and horizon Loc. 77046 (V 8426), Loc. 77047 (V 8427), Loc. 77049.2 (V 8428), Loc. 77049.7 (V 8429) and Loc. 78020 (V 8425); Middle Oligocene, Wulanbulage Formation.

Remark Dental formula 1003/1003. Crown of molars are moderately high. Molar is composed of four crescentic main cusps, forming two pairs, an anterior and a posterior pair. Both M1/ and M/1 have developed an anterocone (id). Incisor is narrow and has feathered, raised thin lines on the anterior surface. The infraorbital foramen is large. The mandible is thick. The mental foramen is located below the posterior part of the diastema. The masseteric crest terminates in a knot below M/2.

While describing *Selenomys mimicus,* Matthew and Granger (1923) were not certain about the presence of an upper premolar. However, Kowalski's (1974) material shows that there is no premolar in *Selenomys mimicus*. It means that the dental formula is 1003/1003. Based on the dental formula and tooth morphology, our specimens should belong to *Selenomys mimicus*.

Concerning the taxonomic status of *Selenomys* there existed different opinion. At first, Matthew and Granger (1923) assigned *Selenomys* to Cricetopidae. Simpson (1945) lowered it to subfamily rank, Cricetopinae of Cricetidae. Then Stehlin and Schaub (1951) placed *Selenomys* under Cricetidae incertae sedis. In short, all of those authors considered *Selenomys* a crice-

tid. However, Mellett (1966. 1968) referred *Selenomys* to the Aplodontidae, mainly based on the inflected angular process at the mandible and tooth characters. Kowalski (1974) followed Mellett's opinion. But Wang (1987) argued that *Selenomys* should be moved to the Cricetidae.

The comparison of *Selenomys* with the Aplodontidae and the Cricetidae in more detail shows that *Selenomys* is more similar to the Cricetidae than to the Aplodontidae in the following characters: 1) *Selenomys* has an hystricomorphous skull which is present in some cricetids (*Cricetops*, *Eucricetodon atavus* and *Pseudocricetodon montalbanensis*), while all known Aplodontidae are protrogomorphous; 2) *Selenomys* has the same dental formula 1003/1003 as all known Cricetidae, while that of Aplodontidae is 1023/1013; 3) In the tooth morphology (e.g., distinct anterocone (id) on M1/ and M/1 and lack of conules on upper molars), *Selenomys* is also similar to Cricetidae rather than to Aplodontidae. Although *Selenomys* seems similar to some aplodontids in having crescent form of the main cusps, *Selenomys* has no conules but does have a crescent hypocone that is never developed in aplodontids. That is, the molars in *Selenomys* are composed of two pairs of crecent cusps. In this feature it is also similar to some cricetids, such as *Scottimus,* and especially *Pliotomodon*. As for the angular process Mellett (1966) pointed out that *Selenomys* possesses an inflected angular process. First, however, not all aplodontids possess this character. A new aplodontid, *Ansomys,* from Shanwan, Shantung, China, does not possess an angular process of this kind, its angular process extends posteriorly without an inflection. Secondly, in addition to aplodontids, there are some other rodents, especially among some sciurids and dipodids, which also possess a strong inflected angular process. So an inflected angular process is not exclusively a characteristic of the Aplodontidae. Its appearance in different suborders of rodents may readily be explained as convergence. Therefore it is better to place *Selenomys* among the Cricetidae.

Conclusion

1. The cricetids from Nei Mongol include four species of three genera: *Cricetops minor, C. dormitor, Eucricetodon caducus* and *Selenomys mimicus*. Except for *Cricetops minor* they were all found in the Middle Oligocene Hsanda Gol Formation of the People's Republic of Mongolia or in the Middle Oligocene of Kazakhastan, USSR. The discovery of these forms in the Saint Jacques area, Nei Mongol, shows that they could expand southeasternward into the area of Ordos. On the other hand, the association of these middle Oligocene cricetids demonstrates that the beds yielding fossil mammals in the Saint Jacques area should be Middle Oligocene.

2. In the middle Oligocene of Asia 6 species of 3 genera of cricetids have been found. They are *Cricetops dormitor, C. aenaes, C. minor, Eucricetodon asiaticus, E. caducus* and *Selenomys mimicus*. Among these *Eucricetodon* is a common genus to both Asia and Europe. The other two genera are endemic and authochthonous. It is interesting that *Cricetops dormitor* is the predominant member of the Hsanda Gol Fauna. The association of the cricetids from the Middle Oligocene of Nei Mongol shows the same feature as in the Hsanda Gol Fauna. It seems that among the Asian Oligocene cricetids only *Eucricetodon* migrated into Europe, the other two genera (*Cricetops* and *Selenomys*) did not migrate into other continental and composed endemic forms, even if they flourished and were widely distributed in Asia.

3. *Eucricetodon caducus* is closer to *E. meridionalis* and may be derived from the latter.

4. *Selenomys* is a cricetid not a aplodontid.